**IT Applications Unit 3, AOS 1, Online Communities**

1. Complete the following, from pgs, 18-28: **Network hardware and software**

**Networks are classified according to below and we will study the following:**

1. **Network Categories: LAN, WAN**
2. **Network Architecture, client-server; peer-to-peer; internet peer-to-peer; intranet**
3. **Network communication standards**
4. **Network hardware and software**
5. **Transmission media**
6. **Network security**

**Network hardware and software**

**Network Operating systems**

1. Describe the role of the network operating system.

The role of a Network Operating System is to control the traffic on a network; it also defines how devices connected to the network will communicate with each other.

1. What are the typical tasks of network server software?

The typical tasks of network server software are:

* Control access to files
* Manages print queues
* Keep track of users through User IDs and passwords
* Authenticating access to servers
* Maintain a log of usage and problems

1. What is the role of network client software?

The role of client software is to establish a connection between the workstation and other devices on the network.

1. List the 3 providers of network operating systems.

Three providers of NOSs are:

* Microsoft
* Novell
* Apple

**Web client software**

1. List the typical client software

The typical client software is:

* Web browser: allows users to view pages on the internet and manages the links used to jump from one document to the next.
* Electronic mail: also known as Email, operate over a network such as the internet or an intranet, simple messages are sent to other users on the network.
* Videoconferencing: allows the transmission of audio and video signals over the internet.
* Instant messaging: involves the real-time exchange of messages and files between online users of a network.

**Software for setting up websites**

1. Describe the role of http protocol.

The role of the http protocol is to ensure that information flows easily and smoothly by making all computers on the internet follow the request and response procedure.

1. What is the role of web server software?

The role of web server is to provide content using the http protocol, this content is usually in the form of html documents, images or other resources.

1. What is the role of a proxy server?

The role of a proxy server is to sit between the client and the rest of the internet, when a client’s browser requests a page to be loaded the request goes to the proxy server and the server then substitutes an IP address for the client.

* 1. What are the advantages of using a proxy server?

The advantages of using a proxy server are:

* It can be used to speed up network traffic (by caching pages)
* They can be configured to block access to certain websites

1. Describe the role of the following software:
   1. SMTP

A SMTP, simple mail transfer protocol, is used on electronic mail server to handle the sending and receiving of client emails.

* 1. POP3

A POP3, post office protocol, is a server that is used to store messages. When the SMPT receives an email for a user on its network it sends the message to the local POP3 server, where it is stored until the client is ready.

* 1. FTP

The FTP, file transfer protocol, is software that enable the uploading and downloading of files between computers on the internet.

* 1. Web software applications

Web software applications are programs that are designed for use on a website (e.g. the blogging software for forums and wikis).

**Cross-platform web software**

1. What is meant by a Cross-platform application? List e.gs.

A cross platform application does not depend on a microprocessor to be compatible with the computers platform rather it uses and execution engine and compiler with libraries so that it runs identically on all machines. Some examples are:

* Flash
* Java

1. What is adobe flash?

Adobe flash is a software tool that enables website developers to combine interactive content with text, 3D graphics, audio and video.

**Network Hardware**

Describe the characteristics and role of the following network hardware devices:

1. Network interface card

A network interface card or NIC is used to link a computer or resource to a network. It can be connected to the network by wires, radio waves, infra-red light waves, microwave or fibre optic cable.

1. Wireless access point

A wireless access point or WAP is used to connect wireless communications devices to a wired or wireless network, this allows for the relay of data between devices on each side of the AP.

1. Switches

A switch is a device that stores the address of every device of every down each wore leading from the switch. The process carried out by the switch allows for the simultaneous connection between different devices.

1. Routers

A router is a communications that acts as a junction between two networks. This allows several remote LANs to connect over a WAN, or to join a number of LANs to make a bigger LAN.

1. modems

A modem is a device that is used to send a computer’s digital signal over the telephone line, a sending modem modulates the digital information it receives from the computer into analogue signal that is compatible with the telephone line, a receiving modem demodulates the analogue received into a digital signal that can be sent to the receiving computer.

For each of the following modem types, in a table indicate the following:

Modem download speed

i) dial up modem

ii) digital modems:

* + 1. DSL
    2. ADSL & ADSL 2 +

iii) cable modems

|  |  |
| --- | --- |
| Modem | Download speed |
| Dial up | 56Kbps |
| Digital modem: DSL | 1.5Mbps |
| Digital modem: ADSL & ADSL2 | 8-20Mbps |
| Cable modem | 30Mbps |

6 How does a digital modem differ from a dial-up modem?

A digital modem is different to a dial-up modem because the dial-up modem converts analogue signals to digital signals but a digital modem does not have to do this.

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